Logistics Management Institute

Making Electronic Commerce Work Within the DoD: The Role of Small Suppliers

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Making Electronic Commerce Work Within
the DoD: The Role of Small Suppliers

Executive Summary

The Department of Defense has launched an aggressive program to replace its paper-based procurement practices with electronic exchanges of routine business information. Since small suppliers are traditionally awarded more than 95 percent of all Defense procurements, their participation is key to the program's success.

Although DoD has expressed concern about the ability of small suppliers to participate in its electronic commerce program in procurement, the experiences of both private- and public-sector organizations that have implemented electronic data interchange (EDI) suggest that such concern is unfounded. Numerous small suppliers are supporting a variety of EDI applications, usually at the request of their largest customers. While some small suppliers object to the cost of implementing EDI — typically between $3,000 and $5,000 — many see EDI as the primary means that business will be conducted in the future and they want to participate.

The often-cited benefits from EDI — decreased paperwork, reduced mailing expenses, shortened order times, reduced inventories, and improved cash management — will be available only to those small suppliers that use EDI to streamline their business practices and expand their customer bases. The benefits will not accrue automatically to every small supplier that implements EDI, whether in support of private companies or government agencies, particularly if they use EDI with only one or two customers.

To ensure that small suppliers participate successfully in its electronic commerce program in procurement, DoD should take several actions:

◆ Establish separate implementation schedules for the smaller suppliers. That action would ensure adequate recognition of the unique features and requirements of small suppliers.

◆ Provide long-term small suppliers with implementation assistance that includes descriptions of the planned electronic procurement system, the selection of EDI software and value-added network support, the use of a "help desk" to aid in timely start-ups, and the schedules that will be followed during implementation. That action would give all suppliers who have provided faithful support to DoD for many years a good opportunity to continue providing that support in an electronic environment.

◆ Alert long-term small suppliers about the potential for increased competition from other suppliers when DoD installations begin to buy products and services electronically, and establish a period for testing all new procurement systems with only current suppliers eligible to participate in that testing. Those actions would help current suppliers become proficient in the use of electronic commerce techniques before they are required to apply them in a competitive environment.

◆ Work with small suppliers to make them aware of how they can use electronic commerce to expand their business operations beyond their immediate requirements. That action would enable small suppliers to capitalize upon their investments in electronic commerce, rather than rationalizing the added costs as simply part of doing business with DoD.

◆ Review the system architectures for Defense electronic commerce applications to ensure they are designed to minimize the amount of information small suppliers need to either exchange or review. That action would minimize the small suppliers' monthly value-added network costs, which are becoming an increasing concern.

Although many small suppliers are already capable of fully participating in DoD's electronic commerce program in procurement, the actions recommended above would help numerous other small suppliers make the transition from their current paper-based business practices to an automated procurement environment. If the recommendations are acted upon, both the small suppliers and the government will benefit from the use of electronic commerce techniques.

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Introduction

PURPOSE

Since 1988, the Department of Defense has been committed to replacing its paper-based business practices with electronic exchanges of routine business information. Within the past year, however, three actions have occurred that dramatically increased the priority of that commitment, particularly in the area of procurement. First, the *Report of the National Performance Review* called for the Federal government to establish an electronic marketplace. Less than two months later, President Clinton endorsed the concepts of an electronic marketplace by stating his full support for the Federal government's use of electronic commerce (EC) to buy all its needed goods and services. Then, in December 1993, DoD put forth an aggressive plan for implementing EC throughout the functional area of procurement.

In FY92, DoD awarded approximately 12 million procurement actions with a total value of $136 billion. Nearly 98 percent of those actions entailed purchases of less than $25,000, with a total value of $13 billion. Since the Federal Acquisition Regulation designates such purchases as eligible for simplified procurement procedures, they are ideal candidates for EC. The Federal Acquisition Regulation further directs contracting officers to set aside many of those purchases for small suppliers. As a consequence, DoD's success in creating a totally electronic procurement environment is directly tied to its ability to obtain full support from its small suppliers.

This report addresses the role of small suppliers in the DoD's EC program in procurement, with emphasis on the actions for ensuring both their initial and long-term participation. While the report focuses on small suppliers in the functional area of procurement, its primary message also has application to other functional areas in which DoD seeks to use EC techniques, including contract administration, finance, maintenance, supply, and transportation.

DEFINITIONS

Several terms are fundamental to understanding the report's message. They are defined below.

- *Electronic commerce* is the integration of electronic data interchange (EDI), electronic mail, electronic funds transfer (EFT), and similar techniques into a comprehensive, electronic-based system for performing routine business functions without the aid of paper. The thrust of DoD's EC program is not merely to automate manual, paper-based processes, but to put in place the necessary systems, capabilities, and procedures that will enable DoD activities to fundamentally improve the way they carry out their day-to-day business operations.

- *Electronic data interchange* is the computer-to-computer exchange of routine business information in a standard format. Many private-sector firms and government activities use EDI to process purchase orders, shipping notices, receipts, invoices, payments, and a variety of other business documents. In doing so, they reap a number of benefits, including reduced errors in data entry, decreased paper handling, increased productivity, reduced inventories, improved cash management, and shortened order times.

- *EDI translation software* converts flat files of data to and from American National Standards Institute (ANSI) X12 transaction sets, the nationally recognized standard format used in EC.

- *Electronic funds transfer* is the exchange of payment and remittance information electronically in a standard format. It eliminates the use of checks and typically shortens the payment cycle.

- *Small suppliers* are independently owned and operated businesses that are not dominant in their field of operations. The criteria that the Small Business Administration (SBA) uses in defining small business suppliers includes their amount of sales and number of employees, which varies from industry to industry.

- *Trading partners* are all suppliers and customers that exchange business information electronically.

- *Transaction sets* are the electronic equivalent of paper business documents; they are composed of data elements and data segments.

- *Value-added networks* (VANs) transmit, receive, and store electronic messages for EDI trading partners.

BACKGROUND

In his *Report of the National Performance Review*, Vice President Gore presented a number of recommendations for reinventing Federal government procurement.[1] Two of those recommendations were aimed at expanding the use of EC:

◆ *Recommendation 4* — Establish new simplified procurement threshold procedures

◆ *Recommendation 14* — Expand the use of EC techniques in the area of procurement.

The first recommendation (#4), if implemented, would raise the threshold for using simplified procurement procedures from $25,000 to $100,000, and create a single electronic bulletin board for giving private-sector suppliers access to government contracting opportunities. The second recommendation (#14) would establish a government wide program aimed at instituting EC as the preferred method for Federal government procurements. President Clinton subsequently endorsed these recommendations in a memorandum to department and agency heads that stated.

> Moving [the Federal Government] to an electronic commerce system to simplify and streamline the purchasing process will promote customer service and cost effectiveness... I am committed to fundamentally altering and improving the way the Federal Government buys goods and services by ensuring that electronic commerce is implemented for appropriate purchases as quickly as possible.[2]

The President also prescribed several objectives for EC within the Federal government, including the following:

◆ Exchange procurement information (such as that contained on solicitations, offers, contracts, purchase orders, and payments) electronically with private-sector suppliers to the maximum extent practical.

◆ Provide all businesses (including small, small disadvantaged, and women-owned) with greater access to government procurement opportunities.

◆ Use nationally and internationally recognized data standards that readily accommodate the electronic exchange of procurement information.

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[1] Vice President Al Gore, *Report of the National Performance Review: Creating a Government that Works Better & Costs Less,* September 7, 1993.

[2] Memorandum for the Heads of Executive Departments and Agencies, "Streamlining Procurement Through Electronic Commerce," October 26, 1993.

During this same time period, DoD was preparing a comprehensive plan for "implementing an EC approach for procurement functions consistent with the American National Standards Institute (ANSI) X12 standards. . ."[3] That plan details DoD's actions for transitioning from its current uncoordinated EC efforts, particularly in using EDI techniques to streamline procurement actions, to a full implementation of EC in the shortest possible time.

The DoD embraced several principles in developing its EC in Contracting Plan, including the following:

- ◆ Use a common set of business practices and operating procedures that require suppliers to subscribe to only one VAN and register once to become eligible for all DoD contracts (commonly referred to as a "single face to industry").

- ◆ Use commercial EDI standards (ANSI X12 or EDIFACT) and DoD implementation conventions to exchange procurement information with private-sector suppliers.[4]

- ◆ Use a systems architecture that accommodates the operational requirements of various functional areas — procurement, contract administration, financial management, transportation, supply management, maintenance, and engineering — and that provides connectivity to both public and private VANs.

- ◆ Use commercial off-the-shelf software, along with reusable government software products, to the maximum extent possible.

The EC in Contracting Plan also describes the benefits anticipated benefits from using EC, provides a timetable for implementation, estimates the required resources, and lays out a strategy for educating government and industry personnel on the operations and objectives of DoD's program. One of the key actions in that strategy calls for DoD to enter into an interagency agreement with the SBA to provide some of the EC and EDI training to current and prospective private-sector suppliers. DoD is specifically looking for the SBA to ". . .institute a comprehensive outreach program that should inform, educate, and train the small business and small disadvantaged business community through the SBA network of 10 regional offices and 68 district offices."

The education strategy further charges DoD contracting organizations with conducting ". . .aggressive local efforts to promote trading partner participation." Those efforts are expected to use the services available through the DoD Procurement Technical Assistance (PTA) Cooperative Agreement Program. Finally, the DoD plans to host 16 regional conferences as a means of introducing private-sector suppliers to its EC program. Those conferences are also expected to serve

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[3] Deputy Under Secretary of Defense (Acquisition Reform), *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting Report*, December 20, 1993.

[4] EDIFACT — EDI for Administration, Commerce, and Transport — is an international message standard for EDI that is based largely on ANSI X12 standards.

as training opportunities for the Small Disadvantaged Business Utilization Specialists and others who will work with individual suppliers at the local level.

ORGANIZATION OF REPORT

Chapter 2 describes the results of a survey of small suppliers, major EDI customers, EDI software providers, and VAN operators. The survey focused on the role of small suppliers in an EDI relationship and the lessons learned from establishing such relationships.

Chapter 3 presents our primary conclusions regarding the role of small suppliers in the DoD's EC program for procurement, along with our recommendations for ensuring that they remain viable participants in that program.

CHAPTER 2

Findings and Lessons Learned

METHODOLOGY

Although much has been written about the benefits achieved from using EDI techniques, about the functions of translation software and VANs in exchanging business information electronically, and about the uses of ANSI X12 transaction sets to represent business information, the role of small suppliers in an EDI program has received considerably less attention. Since the success of DoD's EC initiative in procurement (as well as in other functional areas) hinges upon the participation of thousands of small suppliers, DoD needs to identify the unique requirements of those suppliers and then satisfy them. In an attempt to identify those requirements, we solicited the views of

- major corporations (Ford, J. I. Case, Caterpillar, Bearings, Inc., and Deere & Company) that have implemented extensive EDI programs involving a number of small suppliers;

- various suppliers of products or services (24 in total), ranging from large, national companies (such as Allied Signal Automotive) to small, local suppliers (Young Radiator and Holland Plastics) that are using EDI on a regular basis;

- Wright-Patterson Air Force Base, which recently automated its procurement function, and several small suppliers that are responding to Wright-Patterson's procurement requirements electronically;

- EDI software providers (American Business Computer, Advanced Communications Systems, and Supply Tech) that work with numerous companies and activities to install EDI software on their computers;

- EDI VAN providers (Harbinger, General Electric Information Systems, Sterling Software, and Transettlements) that operate communications systems for exchanging business information electronically; and

- EDI consultants (BK Designs, Pukka Group, Uniform Code Council, and Schwemm, Inc.) that have considerable experience advising companies of all sizes on their EDI programs.

The views of these corporations, companies, activities, and consultants on the requirements of small suppliers are clearly not representative of the universe of small suppliers that eventually could be supporting DoD's EC program in procurement. Nonetheless, they offer considerable insight into the EDI experiences

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of small suppliers. That insight, especially when supplemented with findings from related efforts, should prove useful to DoD.

FINDINGS

This section presents our findings. Most reflect a consensus of the various types of organizations. When differences exist, such as between government and private-sector applications of EDI, we discuss and clarify them.

Participation

Most small suppliers that exchange business information electronically do so at the request of their customers. For many small suppliers, the decision involves a choice between implementing EDI or losing a customer. Since the customers requesting that they establish EDI relationships are often among their largest, the suppliers agree to participate, many reluctantly.

The major customers, whether Ford or Deere & Company, are implementing EDI for sound business reasons. They seek to increase their competitiveness, streamline their business practices, reduce their operating costs, or obtain lower prices on the products they buy. They view EDI as a means of achieving those objectives. As a consequence, the major customers are reaping substantial benefits from today's electronic marketplace, while many small suppliers are using EDI simply to retain their largest customers.

Implementation Assistance

All customers assist their suppliers to implement EDI. Much of the assistance is in the form of "hot lines "or" help desks," technical support, workshops, and demonstrations. Some customers give their smaller suppliers more time to implement, while others recommend specific translation software packages and VAN providers. Wright-Patterson Air Force Base even solicited implementation suggestions from its small suppliers. (The decision to post the winners of all awards resulted from that solicitation.)

Small suppliers would like their major customers to provide free software and consulting services. However, we found that only R.J. Reynolds has given software, but only to a few suppliers that were not capable of exchanging business information electronically (see the *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting Report*). As expected, much of the technical assistance about EDI matters given to small suppliers comes from software vendors and VAN providers. That assistance is part of the normal services those organizations provide to their customers. (Many of the large EDI customers even program for technical assistance from the VAN providers in their implementation plans.)

Use of Trading Partner Agreements

The use of trading partner agreements that detail various contractual matters and protocols governing EDI transactions are commonplace in both private- and public-sector programs. Some of the large private-sector customers did note, however, that they are unnecessary. In contrast, several small suppliers find trading partner agreements useful, while the Federal government places the most emphasis on those agreements, primarily because of it's concern about the legal ramifications of buying products and services electronically.

Implementation Priorities

The major customers in the private sector routinely give priority for implementation to their largest suppliers, measured either by the number of transactions or dollar volumes. By doing so, they can more quickly replace their paper documents with electronic transactions. Customers focusing on either product lines or particular industries indicated that such a focus slowed implementation. Wright-Patterson Air Force Base adopted an entirely different approach. It emphasized the small suppliers because the dollar value for most of its procurements required that they be set aside for the small suppliers. Nonetheless, all customers indicate that the willingness and enthusiasm of their suppliers to implement EDI were probably the most important indicators of a successful implementation effort.

Choice of EDI Software

Although many customers in the private sector (particularly in the automotive industry) have directed their suppliers to use customized EDI software, most respondents indicate that it is not a good practice because that software often is unable to support customers in other industries. They believe that large customers (such as DoD) should detail their plans for conducting business in an EDI environment, but leave the selection of translation software to the suppliers. Hopefully, the suppliers will then select software that will enable them to support the EDI requirements of a number of different customers.[5]

Another factor that large customers need to recognize if they provide or suggest a specific EDI software package is that they are implicitly endorsing the package. If software operating problems occur, many of their suppliers will be looking to them, not the software vendor, for solutions.

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[5] The Logistics Management Institute publishes a document that is designed to aid companies and activities in selecting EDI software: See Harold L. Frohman, *A Guide to EDI Translation Software,* 1994 Edition.

Use of Value-Added Networks

The marketplace has mixed opinions about whether large customers should designate a particular VAN to support their EDI initiatives or let their suppliers select the VANs that they want to use. Compelling arguments exist for both alternatives.

The designation of a single VAN typically results in the provider offering more assistance to suppliers, along with better documentation and problem resolution support. If a supplier is supporting the EDI requirements of another customer, however, then this approach could result in the supplier having to deal with more than one VAN, which may lead to additional cost and operating problems. Manufacturing customers often require their customers to use a specific VAN.

Allowing suppliers to select their own VANs eliminates the problems associated with multiple VANs (as the DoD's EC in Contracting Plan already recognizes). It also gives them the freedom to select VAN providers that meet their requirements, not those of their customers. Since most suppliers enter into an EDI relationship at the request of their customers, the freedom to select a VAN provider is often persuasive. The application of EDI to bid and award processes involving thousands of suppliers dictates the use of multiple VANs. The initial success of Wright-Patterson Air Force Base's automated procurement program, which supports multiple VANs, attests to the validity of this practice.

Effect on Business Relationships

The establishment of EDI partnerships between major customers and suppliers clearly affects their business relationships. In the private sector, that relationship often becomes much closer because the fortunes of all trading partners hinge upon the success they have in exchanging business information electronically. In some applications, such as those established by Wal-Mart, May Stores, and General Mills, the suppliers are linked directly into the customer's point-of-sale systems. When store inventories are low, suppliers replenish the stocks without waiting for customers to issue purchase orders. They then transmit invoices electronically, which the customers pay using EFT techniques.

Other private-sector relationships are not so intimate. In many manufacturing applications, such as in the automotive industry, customers and suppliers have established regular production and delivery schedules. Rather than submitting paper invoices, suppliers use EDI to send invoice information electronically. The customers then pay the amounts they owe through EFT. In some of these applications, even the invoices are omitted because both trading partners know what was delivered and how much the supplier is owed.

The use of EDI to enhance the Federal government's procurement process leads to an entirely different type of relationship. Prior to implementing an EDI-based procurement system, such as Wright-Patterson's, suppliers routinely made

sales calls on government buyers. Those sales calls were beneficial to both the suppliers, who gained a better understanding of the government's requirements, and the buyers, who kept abreast of the latest products. With an electronic procurement system, however, much of the personal contact between suppliers and buyers is lost. In some cases, the commitment of suppliers is also less pronounced because they are seeing nonlocal companies submit winning bids at prices they cannot beat. Both suppliers and buyers have expressed their displeasure over this change in relationships.

Costs

Most responses received from 12 small suppliers that have not yet established an EDI capability, but that still use personal computers to perform various business functions, indicate that they would be willing to spend between $3,000 and $5,000 to implement such a capability, provided that one of their largest customers requested it. This price range is fairly consistent with that obtained from suppliers who have already implemented EDI (some reported implementation costs of less than $1,000).

However, nearly all small suppliers are concerned about the monthly VAN charges, which are typically reported in the $200 to $250 range. Much of that concern appears to arise from uncertainty about the volume of future transactions and from the lack of understanding how VAN charges are calculated. Nonetheless, small suppliers see the VAN charges as a continuing cost that they are powerless to influence.

Benefits

The benefits from EDI vary dramatically, depending on the application and whether the reporting activity is a customer or supplier. In those private-sector applications where the customers and suppliers are intimately linked, both share in the benefits. The customers are able to provide superior service to their retail patrons, reduce the number of their suppliers, and lower their costs. The suppliers also reap substantial benefits: they have an established, profitable business base for the foreseeable future, and they are able to eliminate much of their costly paperwork.

In other private-sector applications, the benefits are somewhat more one-sided. The large customers are able to reengineer their business processes through the use of EDI, with all the associated cost reductions and streamlined operations. They are also able to reduce the number of suppliers supporting their requirements, which tends to further improve product quality. In contrast, the suppliers, particularly the smaller ones, principally retain their largest customers and receive payments quicker. Nonetheless, the small suppliers still must operate both electronic- and paper-based processes because many of their other customers are incapable of operating in an electronic marketplace.

The effects of the Federal government is (or just the DoD's) electronic-based purchase of nearly all its products and services promise to be dramatic. Drawing upon the experiences of Wright-Patterson Air Force Base, the

- number of potential suppliers increases, which could result in lower profit margins for suppliers and lower prices for customers;

- amount of competition increases, which forces local suppliers to reassess their commitment to providing the needed products and services; and

- productivity of buyers increases, which reduces the number of buyers that are needed to prepare the requests and process the bids.

In addition to the above effects, some suppliers consider EDI to be an ideal opportunity to expand their business. They are waiting for other DoD activities to upgrade their procurement functions, which could lead to a further expansion of their customer base. Other suppliers have accepted that their long-standing, highly profitable paper processes are a thing of the past.

Lessons for DoD

The DoD can learn several lessons from our findings. This section provides an overview of those lessons.

CONCEPTS OF ELECTRONIC COMMERCE

Most small suppliers will need some type of overview or introduction to the DoD's EC program that addresses the concepts of translation software, transaction sets, trading partner agreements, and VAN services. The SBA and DoD's PTA are well suited to provide such an overview. The Functional Program Manager for EC in Contracting, however, needs to work closely with those organizations to ensure they provide the type of introduction that meets the DoD's requirements. Nonetheless, DoD installations should not view such assistance as fully preparing small suppliers to effectively support their EDI applications.

INSIGHT INTO SPECIFIC APPLICATIONS

Although some small suppliers will resist the use of automation to improve their business processes, many of DoD's current suppliers will implement EDI as a means of retaining their largest customers. Some suppliers, in fact, will even view EDI as an opportunity to increase their share of the DoD's business.

In spite of the small suppliers' willingness to participate, every DoD installation that automates its procurement function needs to ensure that its small suppliers understand:

- why the installation is replacing its paper-based processes with electronic exchanges of information;

- how the new procurement system operates, including the role of translation software and VAN services;

- what their responsibilities are when problems arise, along with the responsibilities of the installation;

- who to contact when they have a question or problem; and

- when the installation expects to implement the new procurement system.

This insight must come from the installation, not from the SBA or PTA.

EDI TRANSLATION SOFTWARE AND VAN SERVICES

Experience with both private- and public-sector EDI applications suggests that DoD installations should detail their EDI requirements, but they should not designate preferred translation software vendors and VAN providers. The commercial markets for both software and VAN services are sufficiently mature that DoD does not need to assume the added burden of selecting either software vendors or VAN providers for its suppliers.

BENEFITS OF ELECTRONIC COMMERCE

Drawing extensively from the experience of various EDI programs, DoD installations that implement EDI to support their procurement programs will probably reap most of the initial benefits. They will likely experience a substantial increase in the number of suppliers submitting bids, which will result in lower prices; the installations' buyers will be able to process a greater number of contract awards during the normal workday, which will reduce the number of buyers needed to support the installations' requirements.

In contrast, the increased competition will eventually lead to smaller profit margins for some suppliers. Many suppliers will elect not to submit bids in the future, while others will use their new EDI expertise to seek out additional procurement opportunities at other installations, small margins notwithstanding. A number of suppliers will also experience an increase in the number of awards because they will be exposed to more of the installations' procurement requirements.

The installations, however, will not obtain the lower prices and greater buyer productivity simply because they implement an electronic procurement system. They will also need to redesign their procurement application and award processes to accommodate the new business methods. If they do not upgrade those processes, then their response times to the suppliers' bids will increase, the new procurement system will not operate as planned, and the lower prices will not materialize. The Functional Program Manager for EC in Contracting needs to ensure that all installations seeking to implement an EDI-based procurement program also upgrade their procurement application and award processes.

The installations have the additional responsibility of preparing their long-standing suppliers to compete in an electronic environment. That preparation includes describing the potential benefits from EC, both from supporting local requirements and those of other DoD installations; and the risks associated with EC, particularly those stemming from increased competition.

EFFECTS ON THE SUPPLIER BASE

When an installation automates its procurement function, the base of suppliers that have traditionally supported its requirements will probably change dramatically. Some of the changes will occur because a number of local suppliers elect not to submit bids electronically, others because they cannot compete with non-local suppliers that are aggressively bidding for DoD's business. As a result, a number of small suppliers that have had long-standing business relationships with an installation will not provide that support in the future.

To illustrate the potential effect that the use of EDI could have on a particular installation's supplier base, consider the situation at the Naval Construction Battalion Center (NCBC), Port Hueneme, California. In FY92, NCBC Port Hueneme made approximately 16,500 procurement awards for items of supply to more than 3,800 suppliers. More than 4,500 of those awards went to just 25 small suppliers, with 22 of those suppliers located in the Port Hueneme metropolitan area. If NCBC Port Hueneme implemented an electronic-based procurement system, most of its 3,800 suppliers would not upgrade their business practices. Some small suppliers would upgrade, but soon conclude that the lower profit margins precluded them from continuing as a supplier. Others would enthusiastically embrace the use of electronic bids and awards, and seek to expand their business with NCBC Port Hueneme and other DoD installations. Finally, many of the local suppliers that decided not to participate in NCBC Port Hueneme's EDI initiative would be replaced by other small suppliers located outside the immediate metropolitan area.

EXPANSION TO RELATED FUNCTIONS

Many EDI initiatives begin with a limited focus, but then once operational, they branch out to embrace related functions. The DoD's EC program in

procurement is no exception. As detailed in the *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting Report*, the initial thrust is to replace cumbersome procurement paperwork with electronic bids and awards. The eventual goal is to automate the entire process, including all contract administration and payment functions. All installations that upgrade their procurement practices with EDI need to share their plans for improvement in related functions with their small suppliers. That type of information will help to prepare the suppliers for future changes.

SUMMARY

Although DoD has expressed concern about the ability of many small suppliers to participate in its EC program in procurement, the experiences of various organizations that have implemented EDI suggest that such concern is unfounded. Numerous small suppliers are participating in Ford's, Caterpillar's, and Deere & Company's EDI programs, while more than 1,000 small suppliers have already registered to bid electronically on the procurement requirements of Wright-Patterson Air Force Base; the registration list is growing every month. The computer expertise of small suppliers (although it varies widely) has increased dramatically within the past few years, which further eases their transition from paper- to electronic-based processes. The cost to implement EDI, typically between $3,000 and $5,000, is also within the price range of most small suppliers.

Recommendations

INTRODUCTION

With small suppliers receiving 98 percent of all defense contracts awarded in FY92, they are clearly key to the DoD's EC program. They also present a number of fundamental business issues that DoD must recognize and accommodate as it moves forward with EC. The more prominent business issues include the following:

◆ Small suppliers are relatively inexperienced in using computers to automate their business processes.

◆ Small suppliers are largely unfamiliar with the concepts of exchanging business documents electronically and the potential effects that EC could have on their business practices.

◆ Small suppliers provide support often to just one nearby DoD installation, in addition to numerous commercial and retail customers.

◆ Small suppliers will continue to operate paper-based processes to support their non-DoD customers.

◆ Small suppliers are concerned about the cost of participating in the DoD's EC program.

The DoD's EC program must address each of these issues if it is to achieve the President's objective of maximizing the use of EC techniques. This chapter lays out several actions that DoD should take to ease the small suppliers transition from paper- to electronic-based procurement practices.

PROPOSED ACTIONS

Inexperience With Computers

While many small suppliers have automated their accounting and billing operations, only a few have used automation to reengineer their basic business processes. Small suppliers may also experience more difficulty exchanging procurement information electronically than some of their larger competitors. As a result of these and other potential obstacles, DoD needs to ensure that small

suppliers are given sufficient time to implement EC, consistent with their experiences and capabilities.

Recommendation: Functional Program Manager for EC in Contracting should prescribe that all DoD installations implementing EC programs in procurement establish separate implementation schedules and requirements for their smallest suppliers, focusing on either the number of past awards or dollar volumes.

The establishment of separate schedules and requirements for the smallest suppliers would ensure that DoD installations recognize their unique features and capabilities.

Lack of Familiarity With EC Concepts

Many of the small suppliers participating in DoD's EC program will not have any experience exchanging business information electronically, so they will need some type of special assistance. Others may already be transmitting business information electronically to commercial trading partners, but those applications could be dramatically different from DoD's. They too may require assistance. Although DoD's EC in Contracting Plan calls for the preparation of instructional materials and the development of regional outreach conferences to introduce small suppliers to EDI, among other activities, DoD needs to augment and tailor those efforts.

Recommendation: Every DoD installation that implements EC in the functional area of procurement should prepare an implementation package aimed at giving its long-standing small suppliers an extensive opportunity to continue to participate in future procurements.

The package should include educational material addressing the principles of EC, a description of the installation's electronic procurement system, advice on the selection of EDI software and VAN support, use of a help desk to aid suppliers following implementation, and various other information on the installation's EC initiative and its implementation schedules. Each installation should initially limit distribution of the package to its current suppliers because they have faithfully provided support for many years and they warrant a full opportunity to continue providing that support.

Limited Focus of Support

Most small suppliers provide support to only one nearby DoD installation. Although the suppliers have many other customers, both commercial and retail, DoD installations are frequently among their largest and have been for many years. Furthermore, much of their long-standing competition for the installations' business has also been local. Following the implementation of an electronic-based procurement system, however, the number of potential

suppliers to any particular DoD installation should expand dramatically, which may have a profound effect on the ability of local small suppliers to retain their current business relationships with the installation.

> **Recommendation:** All DoD installations implementing EC to support their procurement function should inform their small suppliers of the potential for increased competition from nonlocal suppliers; they should also restrict all procurements during an initial test period to current suppliers.

The DoD has an implicit obligation to provide its long-standing suppliers with information on the new procurement environment that could result following implementation of EC, along with ensuring that they are comfortable with the workings of the new procedures before they are forced to compete against non-local suppliers. The use of a test period, possibly 3 months in length, should be ideal for these purposes.

Operation of Dual Systems

Many of the small suppliers participating in the DoD's EC program for procurement will be exchanging business information electronically for the first time. As a consequence, they will probably dedicate a personal computer to support such transactions, while retaining their traditional paper-based processes. If they do not view participation in the DoD's EC program for procurement as an opportunity to expand their business base, then implementing and supporting EC will simply be viewed as an added cost of doing business with the Federal government.

> **Recommendation:** All installations that are implementing EC in their procurement functions should work with their small suppliers to ensure that they understand its potential applications beyond supporting the installation's immediate requirements.

The cost of supporting both paper- and electronic-based procurement systems could be excessive if small suppliers do not strive to achieve the full potential of EC. DoD has an obligation to advise them of the associated costs and potential for additional business opportunities through EC.

Concern About EC Costs

While most small suppliers would like DoD to provide them with free EDI translation software and VAN services, start-up costs between $3,000 and $5,000 for hardware and software appear to be acceptable. However, the monthly VAN charges are of increasing concern.

> **Recommendation:** Functional Program Manager for EC in Contracting should ensure that DoD's systems architecture for EC and its associated operating practices are designed to minimize the amount of information that

small suppliers need to exchange and the number of prospective procurement requests they need to scan while participating in the program.

Many of the small suppliers that are currently exchanging business information electronically with their trading partners, whether government or private-sector organizations, are concerned about the costs of their monthly VAN services. The DoD should design its EC in procurement programs to minimize those costs.

SUMMARY

By taking the recommended actions — assigning separate implementation schedules, providing additional education and assistance beyond that already planned, detailing the likely operating environment when fully implemented and ensuring that local suppliers are capable of competing within that environment, working with suppliers so they can maximize the benefits from EC, and designing EC operations to minimize VAN costs — DoD would ensure that small suppliers are capable of successfully participating in its EC program for procurement. Each of these actions is relatively straightforward and readily accomplished, as several DoD organizations and activities have already demonstrated.

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This report addresses the role of small suppliers in the DoD's EC program in procurement, with emphasis on the actions for ensuring both their initial and long-term participation. While the report focuses on small suppliers in the functional area of procurement, its primary message also has application to other functional areas in which DoD seeks to use EC techniques, including contract administration, finance, maintenance, supply, and transportation.

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